

1. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{13225}{25}}$$

- A. Irrational
 - B. Not a Real number
 - C. Integer
 - D. Rational
 - E. Whole
-

2. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(7 - 5i)(3 - 4i)$$

- A. $a \in [1, 5]$ and $b \in [41, 51]$
 - B. $a \in [1, 5]$ and $b \in [-43, -38]$
 - C. $a \in [40, 44]$ and $b \in [12, 17]$
 - D. $a \in [40, 44]$ and $b \in [-15, -7]$
 - E. $a \in [21, 24]$ and $b \in [20, 23]$
-

3. Simplify the expression below and choose the interval the simplification is contained within.

$$12 - 16^2 + 7 \div 6 * 5 \div 2$$

- A. $[270, 274.4]$
- B. $[267.4, 269.4]$
- C. $[-245.1, -241.9]$
- D. $[-242.5, -240.2]$
- E. None of the above

4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{225}{196}} + 4i^2$$

- A. Nonreal Complex
 - B. Not a Complex Number
 - C. Rational
 - D. Pure Imaginary
 - E. Irrational
-

5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-5 - 2i)(3 + 4i)$$

- A. $a \in [-18, -11]$ and $b \in [-11, -5]$
 - B. $a \in [-32, -21]$ and $b \in [13, 19]$
 - C. $a \in [-9, -5]$ and $b \in [24, 31]$
 - D. $a \in [-32, -21]$ and $b \in [-20, -11]$
 - E. $a \in [-9, -5]$ and $b \in [-29, -19]$
-

6. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 6 \div 9 * 5 - (20 * 3)$$

- A. $[-58.3, -57.8]$
- B. $[-56.4, -53.1]$
- C. $[-61.6, -58.2]$
- D. $[61.6, 64.1]$

E. None of the above

7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 44i}{-2 - 3i}$$

- A. $a \in [-27.5, -25.5]$ and $b \in [-15, -13.5]$
B. $a \in [0.5, 3]$ and $b \in [-19.5, -18.5]$
C. $a \in [-20.5, -17.5]$ and $b \in [4.5, 7.5]$
D. $a \in [-240.5, -239]$ and $b \in [4.5, 7.5]$
E. $a \in [-20.5, -17.5]$ and $b \in [72.5, 74.5]$
-

8. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{400}{49}} + \sqrt{156}i$$

- A. Not a Complex Number
B. Rational
C. Pure Imaginary
D. Nonreal Complex
E. Irrational
-

9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-36 + 77i}{-1 + 8i}$$

- A. $a \in [650.5, 653]$ and $b \in [2, 5]$
B. $a \in [9.5, 12]$ and $b \in [210, 211.5]$

- C. $a \in [-10, -7.5]$ and $b \in [-7, -5.5]$
D. $a \in [34.5, 37.5]$ and $b \in [9, 10]$
E. $a \in [9.5, 12]$ and $b \in [2, 5]$
-

10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{10}{0}}$$

- A. Rational
B. Not a Real number
C. Irrational
D. Integer
E. Whole
-

11. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{193600}{484}}$$

- A. Whole
B. Integer
C. Not a Real number
D. Irrational
E. Rational
-

12. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-4 + 5i)(-3 - 10i)$$

- A. $a \in [-42, -35]$ and $b \in [55, 58]$

- B. $a \in [-42, -35]$ and $b \in [-57, -53]$
 - C. $a \in [12, 14]$ and $b \in [-52, -47]$
 - D. $a \in [58, 63]$ and $b \in [24, 30]$
 - E. $a \in [58, 63]$ and $b \in [-31, -19]$
-

13. Simplify the expression below and choose the interval the simplification is contained within.

$$6 - 1^2 + 3 \div 20 * 5 \div 10$$

- A. $[7, 7.04]$
 - B. $[7.07, 7.09]$
 - C. $[4.97, 5.02]$
 - D. $[5.07, 5.09]$
 - E. None of the above
-

14. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-780}{6}}i + \sqrt{143}i$$

- A. Pure Imaginary
 - B. Not a Complex Number
 - C. Irrational
 - D. Rational
 - E. Nonreal Complex
-

15. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-4 + 9i)(6 - 3i)$$

- A. $a \in [-2, 4]$ and $b \in [65, 68]$
 - B. $a \in [-26, -23]$ and $b \in [-33, -25]$
 - C. $a \in [-52, -50]$ and $b \in [-43, -41]$
 - D. $a \in [-2, 4]$ and $b \in [-71, -61]$
 - E. $a \in [-52, -50]$ and $b \in [42, 49]$
-

16. Simplify the expression below and choose the interval the simplification is contained within.

$$16 - 8 \div 6 * 9 - (18 * 20)$$

- A. $[-344.15, -341.15]$
 - B. $[370.85, 377.85]$
 - C. $[-357, -353]$
 - D. $[-288, -276]$
 - E. None of the above
-

17. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 - 77i}{6 - 4i}$$

- A. $a \in [-6.5, -4.5]$ and $b \in [-10, -9]$
 - B. $a \in [6.5, 7.5]$ and $b \in [-8.5, -7]$
 - C. $a \in [6.5, 7.5]$ and $b \in [-426.5, -425]$
 - D. $a \in [0, 2.5]$ and $b \in [18, 20]$
 - E. $a \in [361.5, 363]$ and $b \in [-8.5, -7]$
-

18. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-990}{9}}i + \sqrt{165}i$$

- A. Pure Imaginary
 - B. Irrational
 - C. Not a Complex Number
 - D. Nonreal Complex
 - E. Rational
-

19. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 55i}{-1 + 8i}$$

- A. $a \in [5, 6.5]$ and $b \in [-8.5, -7]$
 - B. $a \in [-54.5, -53]$ and $b \in [6, 7.5]$
 - C. $a \in [-8.5, -7]$ and $b \in [5, 6.5]$
 - D. $a \in [385, 386.5]$ and $b \in [-8.5, -7]$
 - E. $a \in [5, 6.5]$ and $b \in [-487.5, -486]$
-

20. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{42849}{529}}$$

- A. Whole
- B. Rational
- C. Irrational
- D. Integer

E. Not a Real number

21. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{52900}{100}}$$

- A. Whole
 - B. Integer
 - C. Rational
 - D. Irrational
 - E. Not a Real number
-

22. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-4 - 5i)(7 + 9i)$$

- A. $a \in [17, 26]$ and $b \in [-74, -65]$
 - B. $a \in [-31, -20]$ and $b \in [-48, -42]$
 - C. $a \in [-77, -70]$ and $b \in [0, 2]$
 - D. $a \in [-77, -70]$ and $b \in [-5, 0]$
 - E. $a \in [17, 26]$ and $b \in [71, 78]$
-

23. Simplify the expression below and choose the interval the simplification is contained within.

$$13 - 1 \div 4 * 2 - (7 * 20)$$

- A. $[109.29, 110.17]$
- B. $[-127.31, -126.91]$
- C. $[-127.51, -127.25]$

- D. $[152.53, 153.05]$
E. None of the above
-

24. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{2}{8} + \sqrt{-4}i$$

- A. Rational
B. Not a Complex Number
C. Pure Imaginary
D. Nonreal Complex
E. Irrational
-

25. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-10 - 6i)(5 - 8i)$$

- A. $a \in [-3, 0]$ and $b \in [108.8, 113]$
B. $a \in [-99, -97]$ and $b \in [-52.5, -49.9]$
C. $a \in [-3, 0]$ and $b \in [-112.2, -107.1]$
D. $a \in [-99, -97]$ and $b \in [48.4, 50.8]$
E. $a \in [-52, -43]$ and $b \in [46.2, 48.4]$
-

26. Simplify the expression below and choose the interval the simplification is contained within.

$$5 - 18^2 + 14 \div 1 * 19 \div 4$$

- A. $[327.18, 332.18]$
B. $[-325.82, -316.82]$

- C. $[-255.5, -250.5]$
 - D. $[395.5, 401.5]$
 - E. None of the above
-

27. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-36 - 88i}{2 - 6i}$$

- A. $a \in [-15.5, -14]$ and $b \in [0, 1.5]$
 - B. $a \in [9.5, 11.5]$ and $b \in [-10.5, -9]$
 - C. $a \in [-19, -17]$ and $b \in [13.5, 15]$
 - D. $a \in [9.5, 11.5]$ and $b \in [-393, -391]$
 - E. $a \in [455, 456.5]$ and $b \in [-10.5, -9]$
-

28. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{110}}{14} + 5i^2$$

- A. Pure Imaginary
 - B. Not a Complex Number
 - C. Nonreal Complex
 - D. Irrational
 - E. Rational
-

29. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{36 - 55i}{-1 - 8i}$$

- A. $a \in [-37, -35]$ and $b \in [6, 8]$
 - B. $a \in [6, 7]$ and $b \in [342.5, 343.5]$
 - C. $a \in [-8, -6]$ and $b \in [-4.5, -2]$
 - D. $a \in [403.5, 404.5]$ and $b \in [4.5, 6]$
 - E. $a \in [6, 7]$ and $b \in [4.5, 6]$
-

30. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{1540}{10}}$$

- A. Integer
 - B. Irrational
 - C. Whole
 - D. Rational
 - E. Not a Real number
-